fications as fall within the true spirit and scope of the invention.

We claim:

1. A rain sampling device, comprising:

(a) a collection chamber for temporarily holding a sample of wet precipitation until said sample is of sufficient size;

(b) means for diverting wet precipitation into said collection chamber;

(c) electrical control means for generating control signals for regulating operations of the sampling device;

(d) valve means including a magnetically actuated plunger for releasing said sample of precipitation from said chamber while blocking further quantities of precipitation from entering said chamber in response to a control signal from said control means;

(e) a plurality of vessels for permanently retaining samples of wet precipitation; and

(f) means for distributing various samples of wet precipitation released from said chamber into different ones of said retaining vessels;

wherein said electrical control means includes a microcomputer means for implementing sampling time schedules for operating said valve means as desired by an operator of the sampling device.

2. The rain sampling device of claim 1, further comprising:

(g) means for automatically activating and deactivating the rain sampling device by engaging and disengaging electrical power to one or more of the components of said electrical control means so that said device is fully operational only when needed in order to thereby conserve electrical power.

3. The rain sampling device of claim 1, wherein said means for distributing samples includes:

a rotatable ring gear having a channel for directing liquid sample materials into different passages which are positioned around the periphery of the gear and which lead to different ones of said retaining vessels, said retaining vessels being stationary.

4. A rain sampling system, comprising:

means for collecting and distributing samples of wet precipitation into vessels for permanently retaining such samples in response to one or more control signals;

(b) electrical control means for generating control signals for regulating the operation of said means for collecting and distributing samples of wet precipitation, said control means including a microcomputer means which is programmable for implementing different sampling schedules as desired by an operator of the system; and

(c) means for automatically activating and deactivating the rain sampling system by selectively engaging and disengaging power to various components of said electrical control means in response to signals from a real time clock apparatus, a moisture detection device or said microcomputer means, said automatically activating and deactivating means engaging power to said microcomputer means in response to signals from said real time clock apparatus or said moisture detection device, and disengaging the power to said microcomputer means in response to signals from said microcomputer means.

5. The rain sampling system of claim 4, wherein said means for collecting and distributing samples includes:

valve means having a magnetically actuated plunger for releasing said samples of wet precipitation from a temporary holding chamber while preventing further samples from entering said chamber in response to a control signal from said electrical control means.

6. The rain sampling system of claim 4, wherein said means for collecting and distributing samples includes:

a rotatable ring gear having a channel for directing liquid sample materials into different passages which are positioned around the periphery of the gear and which lead to different ones of said retaining vessels.

7. A rain sampling device, comprising:

(a) a collection chamber having an entrance port and an exit port for temporarily holding wet precipitation while a sufficient quantity is collected to constitute a usable sample of the said precipitation;

(b) means for diverting said wet precipitation into said collection chamber;

(c) an elongate plunger having a magnetic core which is vertically disposed within said chamber so as to allow it to be vertically displaced and which includes a pair of conically-shaped ends adapted for engaging and sealing off said entrance and exit ports to said chamber;

(d) an electrical coil positioned above said chamber for vertically displacing said plunger upwardly by attracting its magnetic core in order to alternatively open and close said exit and entrance ports to said chamber when electrical power is applied to the coil and thereby allow precipitation samples to be controllably collected and released from said chamber;

(e) a plurality of vessels for permanently retaining samples of wet precipitation; and

(f) means for distributing various wet precipitation samples from said chamber into different ones of said retaining vessels.

8. The rain sampling device of claim 7, further including:

(g) electrical control means for controlling electrical power supplied to said coil and thereby controlling the operation of said plunger.

9. The rain sampling device of claim 8 wherein said electrical control means includes timing means for operating said sampling device to take samples on a predetermined time schedule.

10. A rain sampling device, comprising:

(a) a chamber for temporarily holding a sample of wet precipitation until said sample is of sufficient size;

(b) means for diverting wet precipitation into said collection chamber;

(c) electrical control means for generating control signals for regulating operations of the sampling device;

(d) valve means including a magnetically actuated plunger for releasing said sample of precipitation from said chamber while blocking further quantities of precipitation from entering said chamber in response to a control signal from said control means;

(e) a plurality of stationary vessels for permanently retaining samples of wet precipitation; and

(f) means for distributing various samples of wet precipitation released from said chamber into different ones of said retaining vessels, said means for distributing samples including a rotatable ring gear having a channel for directing liquid sample materials into different passages which are positioned around the periphery of the gear and which lead to different ones of said retaining vessels.

* * * * *